HIGH-FREQUENCY DIELECTRIC CERAMIC COMPOSITION, DIELECTRIC RESONATOR, DIELECTRIC FILTER, DIELECTRIC DUPLEXER AND COMMUNICATION SYSTEM

ABSTRACT OF THE DISCLOSURE

A high-frequency dielectric ceramic composition that has a high Q-factor as well as a large relative dielectric constant, and in which temperature coefficient of the resonant frequency (τ_r) can be controlled to around 0 ppm/°C is provided. The dielectric ceramic composition has a general formula of $Ba[(Sn_{\alpha}Zr_{1-\alpha})_xMg_y(Nb_{\beta}Ta_{1-\beta})_z]_vO_w$, wherein molar ratios x, y, and z are within an area defined by points A (0.30, 0.22, 0.48), B (0.60, 0.12, 0.28), C (0.60, 0.14, 0.26), and D (0.30, 0.25, 0.45) in a ternary diagram, and are not on the line between points A and D, $x+y+z=1.00$, $0.5 \leq \alpha \leq 1.0$, $0 \leq \beta \leq 1.0$, $0.98 \leq v \leq 1.03$, and w is a positive value to keep the composition electroneutral.